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(54) Title: NON-AQUEOUS SOLVENT-FREE PROCESS FOR MAKING UV CURABLE ADHESIVES AND SEALANTS FROM EPOXIDIZED MONOHYDROXYLATED DIENE POLYMERS

(57) Abstract: This invention is a process for making UV curable adhesives, sealants, coatings, ink, flexible printing plates, laminating adhesives, fibers, gaskets, and related compositions, films, and thin parts, wherein an epoxidized monohydroxylated polydiene polymer comprised of at least two different diene monomers wherein at least one is a diene monomer which yields unsaturation suitable for epoxidation is used as the binder for the composition. The preferred epoxidized monohydroxylated polymers are block copolymers of isoprene and butadiene wherein a hydroxyl group is attached at one end of the polymer molecule. These polymers may be hydrogenated or unhydrogenated. The process involves mixing the above polymer or the polymer with one or more other formulating ingredients together with and insoluble photoinitiator which is preferably selected from the group consisting of triaryl sulfonium salts. The mixture is then subjected to mixing conditions in a high speed mixer, preferably a high speed disk disperser, at a blade tip speed of from 200 to 2000 cm/sec at a temperature from 25 to 130 °C, preferably from 40 to 100 °C. This process is highly suited for making stable cationic photoinitiator concentrations that can be added to adhesive, coating, or sealant formulations to effect rapid UV cure.

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